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ABSTRACT

The book provides an overview of the problems and needs of hard of hearing children, the personnel necessary for adequate support services, and the role of teacher training. The five chapter book was designed to give guidelines for administrators and educators. Chapter 1 (by M. Ross), "Definitions and Descriptions", defines the terms hearing impaired, deaf, and hard of hearing and describes the special needs of these children. In chapter 2 (S. Barton) "The Educational Environment", mainstreaming, community involvement, and self esteem are discussed. "Personnel and Services" is the title of chapter 3 (J. Davis) which covers identification and follow-up, the roles of regular and special educators, and service and placement options. Chapter 4 (J. Davis and L. Murphy) is entitled "Personnel Preparation for Services to the Hard of Hearing" and lists competencies needed by school personnel, as well as suggestions for modification to teacher education programs, among others. Chapter 5 (J. Davis) stresses the "Need for Research". (PHR)

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Our Forgotten Children:

Hard-of-Hearing Pupils in the Schools

Editor:
Julia Davis

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Foreword

Over the past two decades, the federal government, through the Bureau of Education for the Handicapped and other agencies of the U.S. Office of Education (Department of Health, Education and Welfare), has become a strong participant, along with local and state school systems, in efforts to increase educational opportunities for and upgrade the delivery of special educational services to the handicapped children of the nation. The most comprehensive and wide-ranging manifestation of this concern is reflected in the enactment, in 1975, of P.L. 94-142, The Education for All Handicapped Children Act.

Incorporating a philosophy of education that is based on constitutional principles, the Act mandates public school systems to seek out all handicapped children, to provide them with free and appropriate education to meet their individual needs and goals in environments that restrict their opportunities the least, and to observe due process in educational placements and programing. The "least restrictive environment" has been interpreted by the courts as the regular classroom for most handicapped children, and placements as near normal as are appropriate for others.

For school districts to observe the intent of the Act, several conditions must be met: (a) children with any degree of handicap must be sought out and identified; (b) the capability of regular class teachers to develop and implement individualized programs to meet the educational needs of these children must be developed; and (c) professional personnel must be available to provide whatever specialized services are needed by the children and to work with regular classroom teachers in the development of individualized programing. These conditions are of special significance to the relatively large number of children in the nation who are hard of hearing—children who are not deaf yet do not hear normally. Traditionally, hard-of-hearing children have been educated like the deaf, when the hearing loss was acute, or like the normally hearing, when the hearing loss was less than severe. Neither kind of programing was addressed to the children's actual hearing problems.

Given the range of hearing loss that the term "hard of hearing" comprises, it is apparent that the least restrictive educational environment for most of the children so identified is the regular education classroom where they can be encouraged to maximize the use of their residual

hearing. For such placement to be feasible, however, professional workers must be available to provide whatever special services are needed by the children and to oversee their progress in an environment which, otherwise, might not be adequately nurturing.

Colleges and university training centers have tended to pay lip service to the needs of all hearing impairments but to concentrate on those of the deaf. The lack of professional concern for most hard-of-hearing children is reflected in the failure to discriminate their unique service needs.

Between October 1975 and March 1976, the National Support Systems Project at the University of Minnesota in cooperation with the Division of Personnel Preparation, Bureau of Education for the Handicapped conducted a series of meetings at which specialists in hearing impairment and speech sought to define and/or describe hard-of-hearing children and their educational needs, and to clarify the implications of both the hearing impairment and the educational needs for the training of relevant personnel. The final meeting was devoted to recommendations for personnel preparation activities which hold promise for meeting the educational needs of hearing-impaired children.

The publication presented here is an outgrowth of that final meeting. The authors, specialists in their chosen professions, have employed their own expertise to distill the findings and recommendations of the participants and to clearly delineate the problems and needs of hard-of-hearing children.

Our experience in special education over the years has provided strong evidence that the better the training provided specialists in the various educational handicaps of children, the greater their ability to support regular education teachers in programing in their classrooms the children with handicaps. Thus, the purposes of this book are threefold:

1. To provide a brief orientation to the problems and needs of hard-of-hearing children for all educators and especially regular classroom teachers and administrators.

2. To stimulate university, college, and other training centers to innovate programs to develop and modify the roles and functions of trainees to enable them to provide essential suppportive services to hard-of-hearing children in school settings.

3. To stimulate school officials to awareness of the important and wide-ranging problems in serving hard-of-hearing children in accord with the mandates of P.L. 94-142.

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Introduction

Many types of physical and mental impairments have been identified in children and educational programs have been devised around them. Of all handicapped children, the hard of hearing are probably the most numerous. They are also the most "mainstreamed" and have been for years, long before the term or concept became popular. Unlike deaf, blind, crippled, or mentally retarded children, the cause of the hard of hearing has not been championed by a specific professional group; they are not the focus of courses offered in training-program curricula for special education personnel; they are not represented by a national organization of parents or educators who seek to inform the public of the specific problems faced by hard-of-hearing children; nor are they the recipients of significant federal, state, or local funding, whose purpose is to upgrade services. In addition, hard-of-hearing children are not easily recognizable and often are mistaken for children with vague, sometimes exotic, always bewildering "problems." Thus, in many educational systems they are invisible children. When anybody thinks about them at all, which is rarely, it is usually the classroom teacher who is given the responsibility of teaching them "this year," or the speech clinician who is expected to clear up their articulation errors on the assumption that it is a top priority among the children's possible needs. The frustration experienced by teachers and clinicians is not always acknowledged by administrators and supervisors.

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The result of these facts is such that few educators point with pride toward the results of mainstreaming as they are demonstrated in the achievements of hard-of-hearing children. For one thing, very little is known about the children's educational achievements, the types of problems they face in regular classrooms, their acceptance or nonacceptance by normally hearing peers, the relation between the support services offered to them and their achievements, or the extent of those support services in the average school system. The data that are available are not cause for optimism. It is painfully evident that, for the hard of hearing, at least, mainstreaming is a very mixed blessing when the children are not provided with special services.

The degree to which hard-of-hearing children are currently ignored is demonstrated in incidence figures reported by state departments of education. In many instances, the number of deaf children reported ex-

ceeds the number of hard-of-hearing, although census data and experience clearly indicate that there are many thousands more hard-of-hearing than deaf children and adults. Only about 300,000 deaf persons exist in this country; the hard of hearing number 18 million. The characteristics of the children are discussed in Chapter 1.

If there are so many hard-of-hearing children around, why have they been so underserved? There are many answers to this question; they relate to the characteristics of the children themselves, the schools in which the children are located, the society in which they live, and the traditional roles of those professionals who are best qualified to serve them. If the squeaky wheel gets the grease, then hard-of-hearing children, their parents, and their teachers have not squeaked loudly enough. As a consequence, they are placed randomly in classrooms for normal children, with or without support services. In the better staffed schools, hard-of-hearing children have their hearing tested at least annually. Many are seen by a speech clinician for speech or language therapy. Few are monitored adequately regarding their educational achievement, and fewer still receive academic support by educational specialists. Their hearing aids, if they wear them, are poorly monitored. Most school personnel who have daily contact with a hard-of-hearing child have minimal understanding of hearing loss and its expected effects, at best, and no information on these factors, at worst.

However poorly prepared the average educator may be to deal effectively with hard-of-hearing children, s/he is expected to do it as part of his/her job as a teacher. It is truly surprising that many educators do as well as they do, and it is a tribute to their teaching skills and concern for children. How much more effective they could be, however, with adequate training (either pre- or inservice) or with the help of support personnel specially trained to habilitate hearing-impaired children.

This book is intended to be an overview of the problems involved in serving hard-of-hearing children in the schools, the personnel necessary for adequate support services, and the role of training programs in preparing all teachers of hard-of-hearing children. The school environment itself is very important and Chapter 2 questions educational practices as they relate to the purpose of education for normal as well as hard-of-hearing children.

The contents of this book are offered as guidelines for administrators and educators who seek to improve the educational opportunities available to the hard-of-hearing children they serve. The impetus for change in educational practices should come from well-informed and committed people from within the educational system, based on an increased

awareness of the underachievement of hard-of-hearing children and the excellent potential they represent. Otherwise, the impetus will surely come from sources external to the schools, which, although concerned and convinced of the need for change, may be ignorant of or oblivious to those factors within the schools that affect the development of special programs. The authors hope that the information contained herein will stimulate evaluation of current educational practices with hard-of-hearing children and subsequent improvement in the services offered them.

CHAPTER 1

Definitions and Descriptions

Mark Ross

One of the salutary effects of the judicial and legislative mandates for the "least restrictive" educational setting for our "special needs" children (Healey, 1976) has been to make us look more closely at the condition of the hard-of-hearing children who, for the most part, always have been with us in our mainstream settings. Although physically present in the mainstream, they have been, more often than not, if one can forgive the cliché, simply drowning there. Their cries for help usually have been ignored or met with desultory, sporadic, and inappropriate responses. However, we now have, as a result of our society's mandates, the opportunity to remedy their situation. We must begin to demonstrate that we can meet their unique needs in a unique manner. It is well to recall that although hard-of-hearing children share a number of common attributes with all other special children, they are not our concern in the present context because of these shared attributes. We do not single them out as a unique category because of the commonalities they share with other "special" children, but because they are different somehow. It is upon these differences that we must focus *first*, and *then* we must seek to apply the educational procedures that foster superior educational opportunities for all children, special needs or no.

The logical procedures to follow are (a) to define what is meant by a "hard-of-hearing" child; (b) to analyze what his special needs are; (c) to develop recommendations and a program which are founded upon the definition of this child and his needs; (d) to identify those professions that, by virtue of their existence, training, and experience, can best implement the appropriate program for the child; and (e) to institute service delivery models within which the program can most efficiently be implemented. The first two procedures are the main foci of this chapter; the remaining procedures are covered in considerable detail in the following chapters.

Definitions

It is important, at the outset, to distinguish as clearly as possible between hard-of-hearing and deaf children. This is not just an academic exercise; the educational practices we prescribe for a particular child can be greatly influenced by the diagnostic label with which we identify him (Ross & Calvert, 1967; Wilson, Ross & Calvert, 1974). The connotations of the term "hard of hearing" are not synonomous with those of "deaf" or "hearing impaired"; an educational program designed for one category (as opposed to individualized prescriptions) may not be appropriate for another category. The sloppy almost interchangeable use of the three terms suggests a malnourished informational base for dealing with hearing loss and its implications. If, at least in a general way, we cannot define the kind of child we are talking about, how can we presume to develop, again in a general manner, the most appropriate educational program for him?

HEARING IMPAIRED

I suggest that we use the term "hearing impaired" generically to refer to any child with any type and degree of hearing loss. Sometimes the term is used with certain qualifier adjectives, such as mild, moderate, severe, and profound, to denote the degree of the impairment. We prefer to use "hearing impaired" to label young children for whom we have, as yet, an inadequate understanding of their degrees of hearing loss and/or auditory functioning. Our goal, through appropriate audiological management, is to move as many "hearing impaired" children as possible to the functioning "hard-of-hearing" category rather than the "deaf" category.

DEAF

The term "deaf" has its own meaning and should be used in a fairly precise manner. Basically—and I am not being facetious—it means that the person so designated cannot hear. This is an important definition because much of our thrust in managing the educational needs of hearing-impaired (in the generic sense) children is directed to the exploitation of residual hearing, which most of them possess in differing degrees. It is an apparent contradiction in terms to talk about exploiting residual "hearing" in a "deaf" person. When the descriptive label "deaf" is improperly applied to a child, the consequence may be an educational placement and, therefore, achievement and behavioral expectations that are consistent with the connotations of the label rather than the child's potential. In practice, the term "deaf" is used to denote any person

whose auditory channel is sufficiently damaged to preclude the *auditory* development and comprehension of speech and language, with or without sound amplification. This usage of the term does not negate the possible value of amplification for "deaf" children; it merely implies that for them sound is a secondary and supplemental channel to vision.

HARD OF HEARING

Our present concern is with the hard-of-hearing child. He hears and uses sound; and deviant though his speech and language skills may be they were developed primarily through an auditory base (DiCarlo, 1968). *In this respect, the hard-of-hearing child is much more like a normally hearing child than a deaf child:* the opposite of the conception held by many professional and lay people. The hard-of-hearing child is frequently treated like a high-achieving deaf child rather than a low-achieving normally hearing child. Many of the educational aberrations to which the hard-of-hearing child is exposed follow from this erroneous, limiting, and basically pessimistic conception. Educationally, when he is considered more like than unlike the deaf child, the visual channel receives the primary stress in language and communication development to the detriment of the overwhelmingly more powerful (for language development and communication) auditory channel. This point of view, which is discussed in more detail in the following section, holds that for the hard-of-hearing child it is necessary, first, to insure that the educational situation optimally exploits his residual hearing, and then to employ the visual channel in a secondary, supplemental, and supportive manner. What I am implying is that, for the hard-of-hearing child, the effective use of the impaired auditory channel can serve the child's primary educational needs better than a primary dependence on the unimpaired visual channel.

It would not be difficult to criticize the terminological distinctions I am attempting to make. There are children who appear to fall somewhere in the grey area between the categories of deaf and hard of hearing. To me, ignoring the real distinctions between these categories because of the occasional exceptions is an educationally self-defeating exercise. Moreover, it is an exercise that undervalues hearing and helps to create more exceptions. I would opt for an optimistic interpretation for viewing these "grey area" children as potentially hard of hearing, and then I would take the correct measures to fulfill my own prediction. On the other hand, I would not expose a deaf child to frustrating and fruitless attempts to create a hard-of-hearing child when his residual hearing is insufficient for this goal. We should not belabor the physio-

logically impossible. Moreover, although the amount of residual hearing is the most important (and most logical) indicant for distinguishing the hard-of-hearing from the deaf category, it is not the only one. Other important influences on the child's ultimate status are the age at which the hearing loss is detected, the effectiveness of the early habilitative measures, and the capacities of the child in many non-auditory dimensions. Many hearing-impaired children who, apparently, possess ample residual hearing to operate auditorially are functionally deaf because of delayed or ineffective habilitative measures or deleterious interaction of other handicaps or problems. When the optimal time for habilitation has passed, these children are not helped by prolonged and zealous efforts to make them primarily auditory communicators. *The recognition of an individual's needs and unique status must transcend any categorical attempt to define or describe him.* Categories such as "hard of hearing" and "deaf" are guidelines, not specific prescriptions for some services or proscriptions of other services.

The currently available evidence suggests that the physiological separation between the deaf and hard-of-hearing categories occurs around the 90-95 dB level. Three very well-respected researchers, the Drs. Boothroyd (Clarke School for the Deaf), Erber (Central Institute for the Deaf), and Levitt (City University of New York) all have found a discontinuity in either speech reception and/or production as the hearing loss exceeds the 90-95 dB level (reported in Stark, 1974). My own and, again, more optimistic formulation is that this figure is a bit low; with early and effective auditory management (including early binaural hearing aids, which provide about an extra 6 dB loudness sensation), this presumed physiological borderline can be increased to the 95-100 dB hearing level (averaging across the speech frequencies).[1]

It is not, however, only at these high threshold levels that problems of definition occur. We also must be concerned with the distinctions between normal hearing and hard of hearing. In other words, how much of a hearing loss is necessary before hearing-related deviances in some academic and behavioral dimension can be assumed? The answer is, not as much as it is generally believed. Even a relatively minor hearing loss can produce problems, according to group data.

In a very interesting study, Quigley and Thomure (1968) evaluated the academic performance of children in relation to their degree of hearing loss. At first, they used a traditional formulation and assumed that any child with less than a 26 dB hearing loss in the better ear would

[1]The frequencies 500, 1000, and 2000 Hz are considered to be the most important for the understanding of speech; thus, they are termed the "speech frequencies."

demonstrate no resultant academic problems. When they looked at their data, however, they found that most of their subjects (82.7%) were in this category and that they had to divide this group into two subgroups, 14 dB or less and 15 to 26 dB, in order to analyze their data better. Quigley and Thomure reported that even the group with the least loss showed some academic retardation. These results were corroborated in part by Ling (1972) and Holm and Kunze (1969). Relatively minor (15 to 26 dB) and sometimes fluctuating hearing losses were found to impact negatively upon language development and academic performance. It is important to note again that these data are group averages; when individual children with minor hearing losses are observed, it is quite possible that some may display average or above-average performance.

Given this qualification, the evidence suggests that children with a 15 dB hearing loss or more in the speech frequencies in their better ears are at risk for the potentially negative impact of the hearing loss on some aspect of their performances. Not only must the degree of hearing loss be evaluated but the shape of the audiometric contour as well. It is quite possible for two children to demonstrate the same average hearing loss but to display markedly different threshold configurations, with quite different adjustment implications. Thus, a child with a hearing loss of 20 dB at 500, 1000, and 2000 Hz would have an average hearing loss of 20 dB; the child with zero thresholds at 500 and 1000 Hz, and 60 dB threshold at 2000 Hz (not a far-fetched example!) would also show an average hearing loss of 20 dB. However, the implications for speech intelligibility, language, academic performance, and behavioral consistency of these two hearing losses are not at all alike: the high-frequency hearing loss has the more negative implications.

Incidence of hearing loss

Keeping in mind that our generalizations must be applied cautiously in specific instances, we can set the hearing-level limits that encompass the category "hard of hearing" from 15 dB at the low end to about 90 or 95 dB at the upper end. Conservatively speaking, there are at least 15-30 times more children in the hard-of-hearing than the deaf category. The most frequently cited number of deaf persons is usually one per 1000 population. Actually, this proportion may be a bit high, if one accepts the notion that to be deaf one must not be able to hear and understand most spoken words and if we consider only school-age children (National Center for Health Statistics). Even if we accept a little flexibility in this figure, we still can see that being deaf is a relatively rare occurrence in our society. Not so being hard of hearing. An extensive study (the so-called "Pittsburgh" study) indicated that about 50 per

1000 school children demonstrate hearing levels, in one or both ears, at one or more frequencies beyond the range of normal (Eagles, Wishik, Doerfler, Melnick, & Levine, 1963). Of these children, perhaps half have a hearing loss of sufficient magnitude and permanency to be at risk in regard to the potential impact of the hearing loss. What these statistics suggest is that there are probably several hard-of-hearing children in every school building in the country. Certainly, there are enough of them to warrant more attention than they have heretofore received.

The Special Needs of the Hard-of-Hearing Child

PSYCHOSOCIAL DESCRIPTION

What does being hard of hearing signify? Not the label, but the implications of the phenomenon bearing the label? Superficially, the hard-of-hearing child does not look or act very different from the other children in his/her class. The child may be a bit of a problem, but so are many of the normally hearing children. He may be withdrawn or aggressive, socially adjusted or maladjusted; and performing adequately or inadequately in some or all academic areas. His speech may be perfectly intelligible, grossly unintelligible, or just a bit "different." Rarely does the hard-of-hearing child exhibit specific behavior that is not also found in some of his normally hearing classmates. Even the one invariable characteristic of his condition—he doesn't "hear" very well—does not uniquely mark him. Remember, he is not "deaf"; he can and does respond to sounds and speech. When he does not respond or, as most often happens, he responds incorrectly or inappropriately, his behavior is not necessarily associated with his hard-of-hearing condition. Instead, he is dismissed as "not listening," not "paying attention," or "daydreaming." This child is accused of "hearing when he wants to," and of deliberate and willful provocation by misunderstanding or ignoring the teacher. Professionals (and parents) dealing with this child cannot understand how it is possible for him to comprehend speech in some situations but not in other superficially comparable situations.

The effect of language complexity, dialectical or poor speech, distance from the speech source, room acoustics, and competing noises, all of which may minimally interfere with a normally hearing child's communication, may have a devastating effect upon the hard-of-hearing child's ability to comprehend the spoken message. It is this apparently random and sporadic behavior that makes the hard-of-hearing child the recipient of behavioral pressures and expectations which are completely beyond his ability to comprehend or respond to. Although he may "hear," he truly does not "understand" in many situations; adults as-

sume that he does "understand" because he quite evidently "hears"; and children tend to find him not a desirable playmate for reasons neither really comprehend. The resulting reciprocally reinforcing conflicts, between the expectations of the adults and the performance of the child, and between the needs of the child and the elusive and blocked gratification of these needs by a hostile, ignorant, or suspicious environment, may impact upon him all through his school life (Elser, 1959; Fisher, 1966; Goetzinger, Harrison, & Baer, 1964; Kennedy & Bruininks, 1974; Kennedy, Northcott, McCauley & Williams, 1976; Reynolds, 1955; Steer, Hanley, Spuehler, Barnes, Burk, & Williams, 1961).

The pity of it all is that rarely is the "minimal" or "moderate" hearing loss pinpointed as the genesis of the child's problem. Instead, the secondary and overlaid problems are often considered primary, and the root of the child's problems is sought in the emotional or neurological spheres; esoteric diagnostic labels are frequently substituted for diagnostic economy and accuracy. Some of the labels with which these children have been afflicted are "aphasic," "central auditory disorder," "minimal brain damage," "specific language disability," and "emotional disorder" (Kleffner, 1973; Merklein & Briskey, 1962; Rosenberg, 1966; Ross & Matkin, 1967). It is not that these disorders do not occur in hard-of-hearing children but that their relevancy can be doubted if a hearing loss exists and its effects are neither discounted or unknown.

SPEECH, LANGUAGE, AND ACADEMIC PERFORMANCE

The behavioral and psychosocial problems which the hard-of-hearing child manifests have their counterparts in the speech, language, and academic domains as well. Except for the children with the most minimal hearing losses, the probabilities are that the hearing loss will be responsible for the deviancies in speech production and speech perception (DiCarlo, 1968; Goetzinger, 1962; Goetzinger, et al., 1964; Oller & Kelly, 1974; West & Weber, 1973), with the more severe losses responsible for the more severe problems (Markides, 1970). Some types of hearing losses may affect just the articulation of certain consonants while leaving voice quality and prosody intact; others may affect both articulation and prosody. Very mild losses may not have an observable effect upon speech or language competencies but, in regard to language, one cannot be sure until this dimension is explicitly evaluated.

In the language and academic performance areas, hard-of-hearing children invariably score much lower than their normally hearing counterparts. The discouraging aspect of this research is that the results reported more than 30 years ago (Caplin, 1937; Pintner, Eisenson & Stan-

ton, 1946; Pintner & Lev, 1939) mirror those obtained more recently here and in other countries (Brannon, 1968; Davis, 1974; Davis & Blasdell, 1975; Hine, 1970; Kodman, 1963; Steer et al., 1961; Wilcox & Tobin, 1974; Young & McConnel, 1957). There is little merit in reviewing or citing all of the studies on this topic in this paper because the same discouraging news is found in them all. Just for illustrative purposes, however, the results of a few typical ones should be noted.

Kodman (1963) and Quigley and Thomure (1968) both found that elementary school children with moderate losses (from about 40-55 dB) performed on academic achievement tests an average of three years behind their normally hearing age peers. Davis (1974) looked at the scores of young hard-of-hearing children on the Boehm Test of Basic Concepts and found that 75% of the hard-of-hearing children scored at or below the tenth percentile on this test, with two-thirds of them scoring at the first percentile. In regard to their language performance, it should be noted that scoring hard-of-hearing children's performances on age-derived norms more likely underestimates their actual problem because the nature of the language breakdown is not observable in this kind of analysis.

In sum, the hearing-impaired child's language performance, compared to that of his normally hearing peers, demonstrates an ever-increasing gap in vocabulary growth, ability to express and understand colloquial expressions and verbal nuances, and comprehension and production of complex sentences. For example, many hard-of-hearing children interpret passive sentences as active and negative sentences as positive. They are unable to process and comprehend embedded phrases and sentences from a larger utterance, and they are completely lost if too many grammatical transformations occur in a single sentence. The casual observer, engaging such a child in social conversation, may not be aware of these problems; they are observable, however, when one considers such a child's performance on standardized tests of language and achievement.

THE ROLE OF HEARING

What this sad litany of events should communicate is that the hard-of-hearing child is handicapped precisely because he has a hearing loss. I make this point not to be simplistic or facetious but as a preliminary to the orientation that remediation measures can be most effective only if the significance of the hearing loss is fully comprehended. This hard-of-hearing child demonstrates speech and language problems because speech and language are normally and, usually, effortlessly developed

through the auditory mode. Possessing an impaired auditory channel, the child's consequent development of speech and language is likewise impaired. Furthermore, and an important generalization to consider, the problems he exhibits in speech and language production and perception and in academic achievement are related to the degree of his hearing loss. Hearing is the key. It is the major cause of the child's handicap and the major avenue through which the handicap can best be minimized or overcome.

Although the speech and language deviations manifested by hard-of-hearing children can be considered a direct consequence of their hearing impairment, not so the problems in academic achievement. The academic lag is secondary to and a reflection of the language deviations and retardations. It is well to note that reading skills—*the* foundation academic area—are not visually but auditorially based. Children learn to read by associating the orthographic symbols with known auditory/verbal language. The basic components of their grammar (phonological, morphological, syntactic, and semantic) are already highly developed by the time the children are expected to learn how to read. They do not learn (although they may refine) these grammatical components by reading. Reading, in this view, is, therefore, a somewhat parasitic skill which is based upon hearing and is of clearly secondary importance in regard to language development.

What is primary for the hard-of-hearing child is the full use of his hearing. By our very definition of what constitutes a hard-of-hearing child, he needs to hear in order to learn, and the better he hears the more he will learn. With this child, we must first insure that the educational situation maximizes the use of his residual hearing, and then we must proceed to remediate the remaining problems. Instead, the child may receive, if he is lucky, a great deal of individual attention in response to his obvious lacks, but often this attention acts as a substitute for appropriate auditory management. The child very well may require this extra assistance, but it should supplement appropriate auditory management and not replace it. Given effective, consistent, and continuing auditory management, we find that most hard-of-hearing children can be educationally programed similarly to their normally hearing peers. The consequent need for special education intervention procedures should then be greatly diminished although not eliminated.

Most educators would recognize the primary role audition plays in learning to read, and the consequent impact upon other academic areas, but they may argue that the issue is moot because "most of our hard-of-hearing children wear hearing aids" and are scheduled for audiological

intervention once a year. As we shall see, however, this argument is a gross oversimplification of what constitutes "appropriate" auditory management.

THE MISUSE OF RESIDUAL HEARING

The misuse of residual hearing is a topic on which volumes can be written but which is only briefly covered here. My basic point is that the acknowledged primacy of the auditory channel for basic language development and derived academic skills is being ignored and violated as it applies to the education of hard-of-hearing children. All of the following points can be supported by existing literature (reviewed in Ross, 1976).

Assume 100 hard-of-hearing children who, from an audiometric point of view, can profit from hearing aids. The odds are that 10-20 percent of these children will not have hearing aids at all. Of the children who do possess hearing aids, 10-20 percent never wear them. (As we discuss hearing aids, let us recall that what we are really talking about is the opening of a highly efficient channel for language growth and not just a little device that one places in one's ear.) Of the approximately 70 remaining children who wear hearing aids, the evidence clearly indicates that only about half of these children are wearing aids that are operable, that provide sufficient amplification, and that do not produce an overwhelming degree of acoustic distortion.

We are left with approximately 35 of our original 100 children. They can derive some benefit from hearing aids in some circumstances but the chances are that only half of them will have had their hearing aids adjusted to the optimal electroacoustic pattern consistent with their hearing loss (Ross, 1975) and, further, not all of them will be provided with the advantages of binaural amplification. If we are optimistic, there are perhaps 20 children left of the original 100 who daily use appropriately adjusted and functioning hearing aids. Not a very good record. The problems are not yet over, however.

The children have to wear their hearing aids in abominable acoustical circumstances (Ross, 1972). The noise and reverberation in the average classroom practically guarantee that a hard-of-hearing child wearing a hearing aid will miss, under the best of circumstances, about 30 percent of the teacher's speech; in the average situation, the child may not be able to understand the teacher at all. The average intensity of the teacher's speech arrives at the microphone of the child's hearing aid only about one to five decibels louder than the surrounding noise. Hearing-impaired children require a signal to noise ratio of at least 15 to 20 decibels before they can achieve what they are capable of. A normally

hearing individual cannot easily appreciate the detrimental effect of noise and reverberation upon the intelligibility of speech processed through a hearing aid and leading into an impaired ear. The relative effect of the noise upon speech comprehension is much greater for the hard-of-hearing child, who frequently has only a shaky grasp on his language, than for the normally hearing child.

As we can see from this brief exposition, the reality of the situation, as opposed to our good intentions, is that the most efficient channel for learning is being shortchanged while we focus on less efficient channels—from which we get less. Now, the question is: What can we do about it?

We can provide personnel in the schools who can (a) oversee the auditory management of the child and the situation, (b) attend to the effects of early or congenital hearing losses upon speech and language, and (c) provide support for the learning of academic information. The personnel trained to provide these types of service and their duties are described in Chapter 3.

Summary

In summary, let us consider the role of audition in primary language development, the fact that most hard-of-hearing children possess adequate residual hearing (by definition), that we have not exploited this fact in practice, and that, if we do, we can work with and treat most hard-of-hearing children like normally hearing kids, rather than something "special." 15

Up to now, the hard-of-hearing child has been a bit of an orphan, sometimes "belonging" to no one, sometimes "claimed" by everyone. We do not, in my judgement, have to create a new profession in order to best provide for the hard-of-hearing child's educational needs. The most important fact for us to consider is that he is not deaf and should not be exposed to educational methods that rely primarily upon vision. When we consider this fact, when we treat a severely hard-of-hearing child as if he were deaf, when we fail to open up his auditory channel to the maximum extent, we as educators are then responsible for the functional creation of another "deaf" person. Consider an analogy with vision: It is as if we provided a moderately visually impaired child from birth, first, with no glasses, then, with a poorly fitting monocle, then, with a random choice of refraction, and then we smeared the glasses with mud while asking him to learn to read small print in very dim light. He would not do very well. As a matter of fact, he very likely would wind up in a special program for the visually impaired and be taught how to

read braille rather than print. We are somehow certain that this horrendous chain of events never occurs with visually impaired children; well, maybe; and hopefully, not, but the counterpart for hard-of-hearing children happens almost every day in almost every school building in the country.

References

Brannon, J. B. Linguistic word classes in the spoken language of normal, hard of hearing, and deaf children. *Journal of Speech and Hearing Research,* 1963, **11,** 279-287.

Caplin, D. A special report of retardation of children with impaired hearing in New York City schools. *American Annals of the Deaf,* 1937, **82,** 234-243.

Davis, J. Performance of young hearing-impaired children on a test of basic concepts. *Journal of Speech and Hearing Research,* 1974, **17,** 342-351.

Davis, J., & Blasdell, R. Perceptual strategies employed by normal-hearing and hearing-impaired children in the comprehension of sentences containing relative clauses. *Journal of Speech and Hearing Research,* 1975, **18,** 281-295.

DiCarlo, L. M. *Speech, language and cognitive abilities of the hard-of-hearing.* Proceedings of the Institute on Aural Rehabilitation, SRA Grant #212-T-68, University of Denver, 1968, 45-66.

Eagles, E. L., Wishik, S. M., Doerfler, L. G., Melnick, W., & Levine, H. S. Hearing sensitivity and related factors in children. (NINDH Grant NB-02375-07) *Laryngoscope,* June 1973.

Elser, R. P. The social position of hearing handicapped children in the regular grades. *Exceptional Children,* 1959, **25,** 305-309.

Fisher, B. The social and emotional adjustment of children with impaired hearing attending ordinary classes. *British Journal of Eduational Psychology,* 1966, **35,** 319-321.

Goetzinger, C. P. Effects of small perceptive losses on language and speech discrimination. *Volta Review,* 1962, **64,** 408-414.

Goetzinger, C. P., Harrison, C., & Baer, C. N. Small perceptive hearing loss: Its effects in school-age children. *Volta Review,* 1964, **66,** 124-131.

Healey, W. C. Integrated education. *Volta Review,* 1976, **78,** 68-75.

Hine, W. D. The attainment of children with partial hearing. *Teacher of the Deaf,* 1970, **68,** 129-135.

Holm, V. A., & Kunze, L. H. Effect of chronic otitis media on language and speech development. *Pediatrics,* 1969, **43,** 833-839.

Kennedy, P., & Bruininks, R. H. Social status of hearing impaired children in regular classrooms. *Exceptional Children,* 1974, **40,** 336-342.

Kennedy, P., Northcott, W., McCauley, R., & Williams, S. N. Longitudinal sociometric and cross-sectional data on mainstreaming hearing impaired children: Implications for preschool programing. *Volta Review,* 1976, **78,** 71-82.

Kleffner, F. R. Hearing losses, hearing aids, and children with language disorders. *Journal of Speech and Hearing Disorders,* 1973, **38,** 232-239.

Kodman, F. Educational status of hard of hearing children in the classroom. *Journal of Speech and Hearing Disorders,* 1963, **28,** 297-299.

Ling, D. Rehabilitation of cases with deafness secondary to otitis media. In A. Glorig & K. W. Gerwin (Eds.), *Otitis media.* Springfield, Ill.: Thomas, 1972, 249-253.

Markides, A. The speech of deaf and partially-hearing children with special reference to factors affecting intelligibility. *British Journal of Disordered Communications,* 1970, **5,** 126-140.

Merklein, R. A., & Briskey, R. J. Audiometric findings in children referred to a program for language disorders. *Volta Review,* 1962, **64,** 294-298.

National Center for Health Statistics, Series 10, No. 35.

Oller, D. K. & Kelly, C. A. Phonological substitution processes of a hard of hearing child. *Journal of Speech and Hearing Disorders,* 1974, **39,** 64-74.

Pintner, R., Eisenson, J., & Stanton, M. *The psychology of the physically handicapped.* New York: Crofts, 1946.

Pintner, R. & Lev, J. The intelligence of the hard of hearing school child. *Journal of Genetic Psychology.* 1939, **55,** 31-48.

Quigley, S. P., & Thomure, R. E. *Some effects of a hearing-impairment on school performance.* Institute of Research on Exceptional Children, University of Illinois, Urbana, 1968.

Reynolds, L. G. The school adjustment of children with minimal hearing loss. *Journal of Speech and Hearing Disorders,* 1955, **20,** 380-384.

Rosenberg, P. E. Misdiagnosis of children with auditory problems. *Journal of Speech and Hearing Disorders,* 1966, **31,** 279-283.

Ross, M. Classroom acoustics and speech intelligibiility. In J. Katz (Ed.), *Handbook of clinical audiology.* Baltimore: Williams & Wilkins, 1972.

Ross, M. Hearing aid selection for pre-verbal hearing-impaired children. In M. Pollack (Ed.), *Amplification for the hearing impaired.* New York: Grune & Stratton, 1975.

Ross, M. *The incidence of hearing aid malfunctions: A review and some recommendations.* Bureau of Education for the Handicapped, HEW, 1976.

Ross, M., & Calvert, D. R. Guidelines for audiology programs in educational settings for hearing impaired children. *American Annals of the Deaf,* 1976, **121,** 346-350.

Ross, M. & Calvert, D. R. The semantics of deafness. *Volta Review,* 1967, **69,** 644-649.

Ross, M., & Matkin, N. The rising audiometric configuration. *Journal of Speech and Hearing Disorders,* 1967, **32,** 377-382.

Stark, R. E. (Ed.). *Sensory capabilities of hearing impaired children.* Baltimore: University Park Press, 1974.

Steer, J. D., Hanley, T. D., Spuehler, H. E., Barnes, N. S., Burk, K. W. & Williams, W. G. *The behavioral and academic implications of hearing losses among elementary school children.* Purdue Research Foundation, Project number P. U. 0240, 1961.

West, J. J., & Weber, J. L. Phonological analysis of the spontaneous language of a four-year-old, hard-of-hearing child. *Journal of Speech and Hearing Disorders,* 1973, **38,** 25-35.

Wilcox, J., & Tobin, H. Linguistic performance of hard of hearing and normal children. *Journal of Speech and Hearing Research,* 1974, 286-293.

Wilson, G. B., Ross, M., & Calvert, D. R. An experimental study of the semantics of deafness. *Volta Review*, 1974, **76**, 408-414.

Young, D., & McConnell, F. Retardation of vocabulary development in hard of hearing children. *Exceptional Children*, 1957, **23**, 368-370.

CHAPTER 2

The Educational Environment

Sara Barton

Mainstreaming the Hard-of-Hearing Child

GOALS OF MAINSTREAMING

As the problems of organizing an effective educational plan for hard-of-hearing children in the mainstream are addressed, the initial questions that should be answered are, Who are the hard of hearing? What services do they need? Who will provide the services and in what kind of delivery model? How will personnel be trained? The process of defining the problems of who, what, and how is blocked by the difficult questions, Why are we doing this? What do we think is important for hard-of-hearing children? Why is it important? What will be the outcome of these programs? It appears that the missing element is the definition of the end goal. Is the end goal of 12 or more years of schooling achievement levels in academic areas? preparation for employment? a socialized individual?

Confusion about the end goals of the educational process apparently is not confined only to education. Other human service systems appear also to be working at cross purposes. They frequently articulate one goal, carry out policy unrelated to that goal, and evaluate effectiveness on the basis of something else altogether.

Before the who, how, and what are specified, perhaps time should be taken to establish dialogues on what is the hoped-for outcome of the schooling process. I would argue that it encompasses more than the achievement of specified areas of knowledge; it should focus on the individual's mastery of the social, emotional, and cognitive competencies that allow him or her to move easily into an adult role. The adult role includes the abilities to find employment, relate comfortably to self and others, become a contributing member of the immediate community and

wider society, and have the intrapersonal capacity to seek and find some measure of happiness.

With an end goal that is broad enough to allow for variation and change and yet specific enough to give unity and direction to its pursuit, the other questions should be easier to answer.

The directions that schools take in educating hard-of-hearing children are determined in large part by public laws, court decisions, and financial incentives. Although the law (P.L. 94-142) currently mandates "appropriate education" for all children in the "least restrictive environment," the definitions of the two conditions will be made by local educational systems in practice.

The "least restrictive environment" for mildly handicapping conditions is generally considered to be the mainstream, the classrooms in which nonhandicapped peers are educated. "Appropriate education" is largely undefined at present. To meet the demands of both aspects of the law, there are needed individualized programing in curricular content, mode of presentation, and rate of presentation, and in the provision of special services.

Corrigan (1976) stated that the "responsible mainstreaming of hearing-impaired children is going to have to be done in the context of reforming the total system" (p. 203). He is critical of the lack of meaningful relationships between teachers and students and of practices that create competition among students, inflexible learning schedules, isolated learning environments, and the isolation of students by age, religion, race, and social class. Corrigan's strategy for reform involves the modification of teacher training; he believes that teachers in training and experienced teachers should participate jointly in the development of better educational practices. He also sees the need for linking all aspects of training and service delivery, not only in educational institutions and agencies but in all agencies which are involved in the delivery of human services. Corrigan's ideas emphasize that students (hearing impaired and normally hearing), service agencies, and training institutions are so interrelated that without their full cooperation positive change for hard-of-hearing pupils cannot take place.

CHANGING ROLES

The classroom teacher who confronts the problem of teaching hard-of-hearing children in the mainstream setting needs to reassess and modify his/her role and traditional practices. The teacher must know about hearing loss and its effects upon learning, amplification, and classroom acoustics. The teacher must know how to create a learning

environment that allows for individualized educational planning and teaching.

Individualized education includes devising a plan for each child that specifies objectives and the activities and teaching techniques required to reach those objectives. Initially, the teacher must assess what the child knows, define the next step in skill acquisition, and specify the activities that lead to the learning of that skill. For each child, the presentation of information and the planning of activities must be synchronized with the strengths and weaknesses of the child's learning style.

As individualized teaching becomes a better defined art, one can envision a change in the schools we know today. Conceptual and physical structures will be modified to meet the goal of stimulating each child to achieve defined objectives. The structure of isolated classrooms will probably be loosened. Each child will go to the place in the learning environment that best meets his/her needs. Teachers will provide situations that foster interactive learning, and they will assume the roles of learning managers and learning facilitators. They will be assisted by trained paraprofessionals. The competencies needed by teachers will be defined at the point of interaction with the child, and teacher training probably will cross the presently defined discipline lines.

Individualized education provides a conceptual framework that allows the hard-of-hearing child and his hearing peers to share social and learning experiences while they acquire academic skills at their own rates and by their own learning styles. It eliminates rigid curriculum, age grading, and competitive attitudes among students. More important, individualized education reduces the importance of differences in learning needs, which was one of the justifications for segregated classrooms.

ATTITUDES TOWARD HANDICAPPED CHILDREN

Defining the mainstream as the preferred educational setting for handicapped children reflects the changing attitudes about handicapped people. Educational programing for the handicapped includes a range of assumptions from denial that the handicapped are entitled to or will benefit from services, through isolation and segregation from the wider community and lesser isolation in special classes, to limited association with nonhandicapped peers, which reflects a less deviant characterization, to acceptance of the sameness of handicapped and nonhandicapped people. The visibility and severity of the handicap often affects which attitude is adopted. Attitudes are also affected by the values that pre-

dominate in a given setting; for example, if a class of children and their teacher value competitive, highly verbal learning situations, the hard-of-hearing child placed in that room will continue to be isolated even though s/he is in the mainstream.

The effectiveness of educational mainstreaming will partially depend on the ability of the mainstream to modify its attitudes and practices. The teacher must be aware of his/her values in relation to handicaps and how these values are reflected in his/her behavior. The teacher must learn how to structure activities that allow hard-of-hearing children to demonstrate their abilities and talents. The use of amplification, the presence of speech and language difficulties, and the needs for extra services and preferential seating will have to be accepted as part of the differences that are present among all people. The concept of mainstreaming will work when hard-of-hearing children view themselves as, in fact, part of the mainstream. This identity will evolve partially from the policies, practices, and behaviors which are exhibited by administrators, teachers, and other students in the school setting.

The Total Community

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Because developing a competent adult extends beyond the boundaries of the school environment, a more interactive relation among the school, home, and community must be conceptualized. Parents have been granted the legal right to act as advocates for their children's right to education. Parents and other persons outside the educational system will need support and guidance from professionals within the system. Teachers have an obligation to make their best determination of a child's educational needs, on the basis of evaluations of current functioning, and to estimate what learning environment the child needs to continue progressing. Teachers should be confident enough to communicate these determinations to parents and others publicly. Parents and teachers must see each other as allies in the process of obtaining appropriate education for children.

Although parents have legal rights in regard to their children's education, we cannot ignore the problems of children whose homes and communities do not give them the educational support they need. Some efforts at compensatory education have been tried with varied success. Schools must develop innovative measures to address the problem. These measures might include the addition of personnel to serve as surrogate parents or liaisons between home and school, or by trying parent-teacher-administrator problem solving and sensitivity groups, modify-

ing reports of pupils' progress, and allowing teachers time to implement educational programs in the children's homes.

The success of the schools in resolving some of these problems is dependent on the ability of the whole human service delivery system to provide effective services. A hard-of-hearing child may need medical care and/or a hearing aid, or the family may have personal/social problems and not have access to community support services. Until more unified and interactive human service delivery systems are developed, some children will remain unable to use the best that educational technology has to offer.

Since school, home, and the immediate community constitute the most important aspects of the learning environment, they can be conceptualized as a unit and as the point of definition for service needs and delivery. Agencies involved in providing health care, income maintenance, education, and psychological support could operate as a team, perhaps out of school-community centers.

Changes of this magnitude will not happen suddenly or easily. Professionals and administrators in all areas of human services must rethink their functions, establish new and attainable objectives, and base these objectives on the reality of their clients' life situations. Initially, the human service personnel will have to reach out beyond the established boundaries of the school, public aid office, or mental health clinic. They will have to establish communication with the staffs of other agencies, parents, and community organizations to develop meaningful objectives together.

NEED FOR POLITICAL ACTION

This change is political in nature and will demand active, sophisticated participation by human service personnel. In the past, education and other human services were rather passive recipients of whatever the political funding structure was willing to provide. Priorities of national, state, and local governments were accepted as being outside the realm of the individual teacher's and human service worker's influence. Recent years have seen various agencies forced to become competitive in the scramble for decreasing public resources as the demands for public services increase. Agency policies have become rigid, responding to political priorities rather than client needs.

Educators, human service workers, and their clients and pupils must develop a unified political voice to make the following demands:

1. An adequate and continual funding base.
2. As much separation as possible from political machinations.

3. Unified delivery systems.
4. Policies that reflect real needs.
5. The right to establish meaningful objectives which can be implemented and evaluated.

Identity

Institutions that engender in the client or pupil a sense of identity and self-worth are esssential components of a system that hopes to foster competent citizens. Because children are in the school for extended periods of time, education shares with the home the responsibility for creating a confirming environment. The hard-of-hearing child in the mainstream educational setting particularly needs positive confirming interactions in situations that emphasize his abilities rather than disabilities.

Human communication theory suggests that interactions among people involve not only the content of the message but definition of the relationships among the communicants. In the process of defining a relationship, communicants are also defining themselves. One of three possibilities exists in an interaction: (a) An individual can receive a confirmation of him/herself, (b) s/he can receive a rejection of him/ herself, (c) or s/he can receive a disconfirmation of him/herself. Confirmation of oneself in an interaction has a great deal to do with the development of personal stability and healthy mental attitudes. If rejection is painful, at least the individual has been recognized enough to be rejected. Disconfirmation is nonacknowledgement, and it is probably the most damaging kind of interaction (Beavin, Jackson, & Watzlawick, 1967).

A learning environment can lend itself to confirming interactions. A learning interaction should involve the teacher transmitting the information, the learner reporting what was understood, and the teacher acknowledging that what the learner understood was what was transmitted, or providing another explanation of the information. The learner would then apply the knowledge in an independent decision-making situation, and the teacher and learner would evaluate the effects of that decision.

If learning environments are to be confirming for all children, this goal must be reflected in all levels of organization. A structure is necessary that allows teachers to discard competition, conformity, and achievement scores as the basis for educational planning. The personal investment of teachers in the outcome of their interactions with students requires the organization's support in the acknowledgement of the importance of that investment. Acknowledgement can be expressed in

reasonable policies, salary, class size, provision of special service, access to training and materials, and community support.

The hard-of-hearing child shares with all other children the need for an education in an environment that confirms his or her identity and prepares him or her for adulthood.

Summary

The hard-of-hearing child has not received the educational services that s/he has needed. Even if the hearing loss has been identified, the lack of monitoring and educational personnel specifically trained in this area have led to underachievement by hard-of-hearing children in school. The recent law mandating "appropriate education" in the "least restrictive environment" for all children will have a significant effect on educational programing for the hard-of-hearing child.

A number of issues are raised by the anticipated changes. Hard-of-hearing children can be educated in mainstream (nonhandicapped) classrooms with the support of rehabilitative service. Individualized educational programs will be necessary to meet the mandate of "appropriate education." Changes to meet the mandate also involve the restructuring of educational delivery systems and the roles assumed by teachers.

In the process of addressing the practical problems of teacher training, organization of delivery systems, and provision of trained specialists, another level of questions arises. These questions concern such issues as the end goal of education, the relation of education to the community and other human service delivery systems, the politicization of educators, and the need for a system that confirms the identify and worth of the individuals within that system.

References

Beavin, J. H., Jackson D. D., & Watzlawick, P. *Pragmatics of human communication*. New York: W. W. Norton, 1967.

Birch, J. W. *Hearing impaired children in the mainstream*. Reston, Va.: Council for Exceptional Children, 1975.

Corrigan, D. Needed reforms in schools and teacher education: A context for discussing the education of the hearing-impaired. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation*. Minneapolis, Minn.: Leadership Training Institute/ Special Education, University of Minnesota, 1976, 203-218.

Reynolds, M. C. (Ed.). *Mainstreaming: Origins and implications*. Reston, Va.: Council for Exceptional Children, 1976.

CHAPTER 3

Personnel and Services

Julia Davis

Identification and Follow-Up

Estimates of the number of school-age hard-of-hearing children vary with the definition of the population. It is generally agreed, however, that the actual number probably is far greater than any of the estimates. If hard-of-hearing children are to be adequately served, then the first step must be to identify them through systematic programs.

Two major types of identification are needed: before children are old enough to enter school (from birth to about 5 years of age), and when children are in school, from kindergarten through twelfth grade. The effects of hearing loss (Ch. 1) are such that the longer the hearing impairment is undetected and untreated the more serious is the problem and the less likely is it to be remediated optimally. Since hard-of-hearing children are found in all segments of the population and in all geographical areas, the local public school system is the most appropriate agency to assume the responsibilities of early identification of and early intervention with these children, whether independently or in cooperation with other local agencies. These activities are usually a part of a hearing conservation program that requires the services of well-trained professional personnel as well as of administrators who are willing to coordinate the activities of various school and community agencies (medical and speech and hearing) that may be available in the area.

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Not many school systems have well-developed hearing-screening programs. Since hearing loss is an invisible handicap, hard-of-hearing children (especially those with mild to moderate losses) are often misdiagnosed as slow learners, mentally retarded, behavior disordered, or learning disabled. These diagnoses are frequently made on the basis of behavioral observations rather than more objective data. To be most effective, identification programs must include follow-up procedures: the

assessment of speech and language skills, academic achievement or readiness, and intellectual status. These psychoeducational data must be interpreted in the light of the known effects of hearing loss on verbal tasks. The failure to recognize language deficit as a concomitant of hearing loss often results in the misinterpretation of low scores on achievement or intelligence tests, many of which do not separate verbal from performance skills. The results of tests containing verbal items reflect the child's linguistic rather than intellectual status.

In addition to the assessments noted above, hearing conservation programs should provide for remediation services that may include (a) the selection of amplification, (b) home visitation by a clinician or teacher, and (c) enrollment in the educational program best suited to the child's particular needs.

The fact that a child was identified sometime in the past as having a hearing loss does not guarantee that the persons who are currently in contact with him/her are aware of and sensitive to the effects of the hearing loss. Identification programs are strengthened, therefore, by in-service training aimed at helping school administrators and classroom teachers to recognize the symptoms of hearing loss and understand its implications, and to know the local resources and personnel which may be called upon to verify and quantify hearing losses and their effects.

The hearing conservation programs that are most likely to result in adequate services for hearing-impaired children are those that are developed and directed by well-trained audiologists. Brown (1976), of the Iowa Department of Public Instruction, described an extensive hearing conservation program that warrants additional discussion.

According to Brown, screening should be performed in several, if not all, elementary grades and in at least one grade in junior and senior high schools each year, and annually on all children in special educational programs, all students who are new to a school district, and all children who are suspected by teachers of responding poorly to sound. In addition, high-risk registers should be established in conjunction with local medical facilities so that all children who are at risk for hearing loss can be screened as soon as they are so identified.

For purposes of follow-up, the children should be grouped into various categories, depending upon the results of the screening. Categories may include (a) children with normal hearing, (b) children with hearing losses that are nonsignificant both medically and educationally,[1] (c) children with medically significant hearing losses, (d) children with

[1] Nonsignificant hearing losses are usually defined as high-frequency losses (at frequencies above 4000 Hz) or mild losses at a single frequency.

medically and educationally significant hearing losses, and (e) children with educationally significant hearing losses.

Each group should be monitored by the audiologist and classroom teachers, but to differing degrees. Children whose hearing is normal or whose hearing losses are nonsignificant medically and educationally [(a) and (b)] may be screened annually or whenever their teachers think it is necessary. The children and their parents should be provided with information by the audiologist on hearing and the prevention of hearing loss, and teachers and parents should be instructed to observe the children for any indications that their hearing may be becoming poorer.

Children with medically significant hearing losses (c) should be referred by the audiologist for medical examination and possible treatment. The nature of the hearing loss should be explained to parents, teachers, and other school personnel. Arrangements can be made for preferential seating in the classroom if it seems appropriate. Hearing testing should be repeated after medical treatment is completed. Close cooperation between the audiologist and the physician is important.

Children classified as having medically and educationally significant hearing losses (d) should be referred for medical evaluation and treatment. In addition, amplification may be provided on a temporary basis and preferential seating in the classroom may be arranged. If necessary, services may be provided by speech and language clinicians or itinerant teachers of the hearing impaired as long as necessary. When the hearing loss is no longer present or stabilized these children are reclassified into some other category.

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Children who have educationally significant hearing losses (e) are referred for both medical and complete nonmedical evaluations, preferably by a team of professionals who measure academic performance, speech and language skills, intellectual status, social interactions, and the use of amplification. Each classroom in which such a child is placed should be analyzed for noise sources and reverberation patterns so that recommendations for amplification can take into account the child's acoustic environment. When the evaluation is complete, a staffing should be held at which the building principal, classroom teacher, parents, and specialists (speech and language clinician, audiologist, teacher of the hearing impaired, psychologist) can discuss the test and observational data and make educational recommendations for the child.

For the children in this last category (e), continuous monitoring by the audiologist and other special personnel is essential. The successful use of a hearing aid or other amplification device depends to a great extent on satisfactory adjustment to the aid in every-day environments.

Hearing aids do not automatically overcome the language and academic problems of hard-of-hearing children; hence constant monitoring and appropriate support services must be provided if the child is to be successful in school.

Role of Regular Educators

TEACHERS

The majority of hard-of-hearing children in the public schools are found in regular classrooms where they may or may not receive support services from professionals trained in speech and language, education of the deaf, or audiology. In many schools, the sole responsibility for educating hard-of-hearing children rests upon the classroom teachers or other general educators who have had no specific training in the implications of hearing loss for education and who have little or no general understanding of hearing impairment. This condition places an unreasonable burden on these teachers even though they are the logical persons to provide academic instruction to many hard-of-hearing children. The situation is not likely to change much in the coming years, at least with regard to two factors: (a) Training programs for teachers are not likely to include routinely subject matter related to the education of
30 hearing-impaired children, and (b) the number of hard-of-hearing children being served in regular classrooms is not likely to be reduced; in fact, the number may be increased as a result of the federal legislation that requires handicapped children to be educated in the "least restrictive environment"[2] wherever possible.

Even without handicapped youngsters in regular classrooms, teachers are faced with children who are heterogeneous in terms of ethnicity, socio-economic status, and ability. The presence of children with handicaps, such as hearing loss, increases the complexity of the teacher's task and often without a corresponding increase in training or support or a decrease in class enrollment. The result, when support has been inadequate, has been discouraging to teachers and detrimental to the education of handicapped children. It is important, therefore, for local school systems (a) to recognize the difficulties involved in educating hard-of-hearing children in regular classrooms, and (b) to provide the necessary supports to teachers to insure that the regular classroom is the "least restrictive" environment for the children who are placed there.

Certain characteristics have been found to be important in the teachers who serve hard-of-hearing children in their classrooms. Since the

[2] P.L. 94-142.

principles of learning are the same for hard-of-hearing and normally hearing children, good teaching skills are most important. Teachers should be able to find satisfaction when children's rates of learning and progress toward stated goals are slower than normal. Hard-of-hearing children, because of the ambiguity of what they hear, may learn vocabulary and concepts more slowly than normally hearing children and they may require more and varied repetitions of information than their classmates. Many teachers find this situation frustrating. They experience feelings of inadequacy if they cannot observe rapid learning in their students. A teacher who is impatient with slow progress creates an anxious environment which is not conducive to maximizing a child's learning.

Flexibility is another essential characteristic for teachers who serve hard-of-hearing children. Teachers must be able to use different methods to optimize a hard-of-hearing child's ability to learn. The teachers may be required to change their patterns of behavior, such as writing on the chalk board while talking to the class, to increase the hard-of-hearing child's grasp of the presentation. If they are asked to wear a microphone component of an auditory training unit, they should be able to accept such a request. When support services demand the alteration of class schedules for a hearing-impaired child, teachers must be able to recognize and adjust to the necessity. If a hard-of-hearing child appears to understand a concept but becomes confused when the material becomes more difficult, teachers must be able to adjust to such behavior and learning patterns without giving up on the child.

The ability to analyze task and performance and to break them down into a sequence of small steps is helpful. Hearing-impaired children often exhibit very "spotty" knowledge of basic concepts and facts. They frequently fail at tasks because they lack some underlying but not obvious piece of knowledge. The teacher who can apply task analysis systematically gains useful insight into the academic problems of hard-of-hearing children.

Because the classroom teacher sets the "tone" for classroom attitudes, it is important that s/he *like* children, even those who learn slowly and require more time and patience than others. A positive attitude toward the special child is transmitted to the other children in her class; their attitudes toward the child are influenced and probably improved. The teacher's negative attitude has the opposite effect; it results in an increase over the usual teasing, ignoring, or hostile behavior which children sometimes exhibit toward peers who are different.

The importance of systematic inservice training for regular teachers cannot be overemphasized. It should be conducted by specialists, such as

audiologists, language clinicians, and teachers of the hearing impaired, and it should cover the following topics: (a) how to recognize signs of poor hearing; (b) the effects of noise on communication; (c) the advantages and limitations of hearing aids; (d) how to check hearing aids for malfunctioning; (e) how to use auditory training units effectively; (f) the language and academic effects of hearing loss; (g) the characteristics of the hearing loss of the particular child to be served; (h) the linguistic and educational status of the particular child to be served; (i) techniques for maximizing communication with hard-of-hearing children; and (j) the roles of the specialists who are available for support and guidance. Handouts similar to the one at the end of this chapter may be helpful.

Close cooperation between teachers and support personnel is also essential. Classroom observation by the latter should be encouraged and staffings should be held regularly to discuss the child's needs and progress. The results of all evaluations and/or special treatment should be made available to the classroom teacher, and classroom performance should be described to the specialists. Individual language therapy or tutoring should be coordinated with classroom activities so that preteaching or the reinforcement of concepts presented in the classroom can be provided.

PRINCIPALS

The building principal plays a vital role in the education of hard-of-hearing children. He or she often serves as the liaison between specialists and classroom teachers and may influence the attitudes of both. Arrangements for inservice training and scheduling must be coordinated through the principal's office. A thorough understanding of the needs of hard-of-hearing children prepares the principal to request the necessary support services or funds to adequately serve these children. The principal often has the most success in convincing central administrators of the problems of educating special children and the necessity to increase funds and services for them. The assignment of hard-of-hearing children to appropriate classrooms is often the responsibility of the principal who, therefore, seriously influences the child's education. Finally, the principal has primary contact with the parents of the children served. He or she presides at staffings and tries to provide feedback to the parents about the program designed and the child's progress in it. Although s/he may delegate responsibility for team management and parental counseling, the final responsibility for the child at the local school level rests with the principal.

Roles of Special Personnel

Hearing-impaired children receive services from several educational and speech and hearing specialists. While no one questions the advisability of a child's being served by a team of specialists composed of a speech pathologist, audiologist, teacher of the hearing impaired, psychologist, and learning strategist, there is often disagreement about which specialist should take major professional responsibility for the child. In the past, no one specialist has assumed this responsibility, and the result has been that the hard-of-hearing are the forgotten children of the public schools. Neglect of their educational needs may be traced to two major factors: (a) the unavailability of information about their needs and characteristics; and (b) the trend in training programs toward the production of specialists who are quite narrow in interests and abilities. The latter has resulted in specialists who diagnose but do not treat conditions, such as hearing loss; who teach deaf but not hard-of-hearing children; or who remediate language disorders, but only if they have no organic base. The professionals in any field who are knowledgeable enough to plan, supervise, and execute educational programs for hard-of-hearing children are rare but, fortunately, their numbers are growing. A description of the activities performed by and the training required for the specialists who are most likely to serve hard-of-hearing children may be helpful in determining who should assume the responsibility of case manager or major advocate for the children.

SPEECH PATHOLOGISTS

Speech pathologists (or clinicians) receive extensive training in disorders of speech and language of various etiologies. They are required to obtain a Master's degree, pass a national examination, complete 300 clock hours of supervised training practica with persons with speech, hearing, and language disorders, and work for nine months under supervision before they are eligible for certification as speech pathologists by the American Speech and Hearing Association (ASHA). These professionals are trained to analyze speech and language behavior and to modify it through various clinical strategies. Speech clinicians work directly with children to improve their receptive and expressive language skills, and with teachers to coordinate specific speech and language therapy with what is occurring in the classroom. Language concepts necessary for academic achievement are often taught or reinforced by the speech clinician during treatment time.

Speech clinicians are frequently the only professionals who see hard-of-hearing children regularly in the average school system, and often

they are the ones who identified the children as having hearing losses. Under these circumstances, the responsibility of the speech pathologist is to

> evaluate linguistic performance, organize and provide a program for the improvement of linguistic skills, teach alternative/supplementary systems of speech comprehension, and mobilize other resources to achieve the goal of acquisition of the most normal communication system the individual can acquire. (McDermott, 1976, p. 87)

These duties are time consuming and require frequent and relatively lengthy interactions with the hard-of-hearing child or his teachers. Unfortunately, most speech clinicians have a case load of 75 or more children at any given time, making it impossible for them to devote the time that is necessary to insure the hard-of-hearing child's maximum development. Typically, the speech clinician spends from 20 to 30 minutes, twice a week, with each child, but within the context of a group of other children. For most hard-of-hearing children who are attempting to achieve in a regular classroom, this amount and kind of interaction is insufficient for their needs.

AUDIOLOGISTS

Audiologists are trained in the assessment of hearing and the habilitation of persons with hearing losses. Much of their educational background is similar to that of the speech clinician (e.g., language development and aural rehabilitative techniques). Like speech pathologists, audiologists are required to obtain a Master's degree, pass a national examination, and complete the same number of supervised practicum hours and months of supervised work before receiving ASHA certification. Instead of working with a wide variety of disorders, however, the audiologist works exclusively with hearing-impaired persons.

In the schools, audiologists are responsible for hearing-conservation programs, which include hearing screening, re-testing, referral for medical or further audiological examination, and follow-up activities after a child has been identified as hard of hearing. It is the final portion of the audiologist's duties that are critical to the success of the hard-of-hearing child in school. Follow-up activities may include inservice training for teachers and counseling for parents on the effects of hearing loss on speech, language, and academic performance. The use of a hearing aid by the child or the teacher's use in the classroom of auditory training equipment with the child must be explained. The audiologist is responsible for monitoring the child's amplification devices, analyzing the acoustic environment of the classroom, and suggesting environmental

modifications to enhance the child's ability to hear. He or she plans language development and/or therapy programs for the hard-of-hearing child. However, because of the job descriptions in use in most school systems, the audiologist rarely spends much time in direct contact with the child except for assessment purposes. Yet the audiologist is the professional who is most suited by training to understand the effects of hearing loss on all aspects of the child's life and often is the logical person to conduct or supervise evaluations of academic achievement and other behavior, especially when communication is difficult and test results must be interpreted in light of the child's specific deficits.

Many audiologists have little training in the habilitative aspects of hearing impairment; they have concentrated instead on diagnostic procedures to the exclusion of many of the activities described above. Training programs are now seeking to provide more broadly trained audiologists, especially for employment in the public schools, and are labeling them "educational" or "school" audiologists. The terminology is not important but the emphasis during training is; prospective employers of audiologists in the schools should scrutinize the applicants' training and experience carefully. Graduates of training programs that emphasize habilitation and provide practicum experiences in the public schools are most likely to be effective members of teams designed to provide services to enable hard-of-hearing children to achieve maximally.

TEACHERS OF THE HEARING IMPAIRED

Although the trend is to refer to these trained persons as teachers of the hearing impaired, most training programs train them to become teachers of the deaf. Very little coursework or practicum is devoted to the hard-of-hearing child, even though this child's educational problems are quite different from those of the deaf (Ch. 1).

The teacher of the hearing impaired may have a Bachelor's or Master's degree in education of the deaf. This specialist is trained to teach academic subject matter to hearing-impaired children, and to use various strategies for teaching language and speech skills, particularly to children with profound hearing impairments. When the children to be served are hard of hearing, some modification of these strategies is necessary for two reasons: (a) Much of the responsibility for teaching subject matter to hard-of-hearing children falls on the regular classroom teacher, and (b) hard-of-hearing children are capable of learning through the auditory system. Hard-of-hearing children are exposed to the same curricular materials and methods as their hearing peers. The teacher of the hearing impaired who serves hard-of-hearing children is usually an itinerant or a resource room teacher who sees each child

several times each week (perhaps daily) for a short period. The teacher reinforces the child's learning of classroom academic material, making sure that the child understands the concepts under discussion and, sometimes, modifying curricular materials for the child. Tutoring in reading and other subjects is often a part of this specialist's activities.

There is considerable overlap among the services provided by teachers of the hearing impaired, speech clinicians, and audiologists, although each has his/her own area of specialty. For the audiologist, it is the monitoring of hearing, hearing aids, and acoustic environment; for the speech pathologist, it is assessment and remediation of receptive and expressive language; and for the teacher of the hearing impaired, it is the teaching of academic subjects. When all three of these specialists are available, the children's chances of success are increased. When only one is available, the children seldom receive the necessary support services to achieve success; the one professional must attempt to fill three separate roles for which he/she has neither the time nor training.

PSYCHOLOGISTS

Requirements for school psychologists are set by the certification provisions of the states. A Master's degree is standard, but some states require 60-70 hours of graduate work for certification. The psychologist receives training in the assessment of intellect, learning skills, social maturity, academic performance, and perceptual skills, and in the relations of these factors to school performance. The psychologist also may furnish prognostic information as a guideline for educational placement, curriculum modification or choices, and behavior management, and provide inservice training.

Unfortunately, most psychologists receive little or no training in testing or working with hearing-impaired children. The nature of the children's linguistic development and its effect upon the results of standardized testing are poorly understood. If school psychologists are to be most effective with hearing-impaired children, it may be necessary for them to receive inservice training from those other team members whose training has been concentrated on the hard-of-hearing child.

TEAM MANAGERS (CHILD ADVOCATES)

The problems of hard-of-hearing children are complex and varied enough to fill their educational experiences in the public school with opportunities for failure and discouragement. The fact that the majority of hard-of-hearing children are located in local school systems that are unable or unwilling to provide adequate support services increases the likelihood that the children will not achieve the maximum possible benefit from their exposure to education. The need for professional benefac-

tors for this special group of children is obvious; the question is, "Who should they be and what should they know?"

The advocate for the hard-of-hearing child should possess the following information:

1. A thorough understanding of hearing loss, its causes, and its effects on language development, academic achievement, and psychosocial development.

2. A thorough understanding of appropriate treatment for hearing disorders, including medical, audiological, and educational procedures.

3. Knowledge of different amplification systems, their advantages and disadvantages in various situations, principles upon which they are selected, and maintenance procedures.

4. Knowledge of the principles of interpersonal communication, which should be used with members of the team who serve the hard-of-hearing populations.

5. Understanding of parental counseling procedures.

The advocate may be prepared to conduct or supervise remediation sessions or to teach academic subject matter, but these activities are not as necessary for the role of advocacy as is the *understanding* of hearing loss and the knowledge of what is required to provide beneficial educational settings for the children involved. Relatively few persons in the public schools at present may meet these minimal qualifications, but the training of such persons is certainly possible. A few training programs throughout the country are doing so currently; in each program the professional being prepared is an audiologist. The choice seems to be logical because audiology training programs always have concentrated on hearing disorders and hearing aids, two of the more technical aspects of the training necessary for advocate personnel. Most training programs have access to information on interpersonal communication and counseling; with effort, they can provide the remainder of the necessary information. Happily, more and more audiology training programs are choosing to do so, and the graduates of these programs are well prepared to assume the task of team manager for the hard-of-hearing child. This model is working successfully in the state of Iowa, which employs more than 50 audiologists in its public schools. Within the past few years, local education agencies have increased their services to hearing-impaired children dramatically under the leadership of audiologists at the local level.

Regardless of their titles the advocates for hard-of-hearing children must be prepared to meet resistance to their efforts. Adequate support services require financial outlay; the best program for a given child may

not coincide with the most economical use of school funds. The advocate probably should not be a director of special education or other administrator because of the conflict of interest that may arise. At the same time, the advocate must recognize but not be overwhelmed by the restrictions that exist within an education agency. Flexibility combined with tough-mindedness is needed if changes beneficial to hard-of-hearing children are to be effected.

Service and Placement Options

A variety of services and placement options are needed to insure that hard-of-hearing children achieve educationally. These options include the following:

1. Self-contained classrooms for hearing-impaired children that are taught by a teacher of the hearing-impaired. Children are placed here when their academic, communicative, linguistic, and/or social skills are too low for placement in a regular classroom. Most hard-of-hearing children do not require this type of placement, although a few can benefit from it for a limited period of time. The teacher of a self-contained classroom has major responsibility for teaching academic subject matter; the curriculum followed should be coordinated closely with that used in other classrooms, since the goal for hard-of-hearing children is to move them as quickly as possible into the regular classroom. This goal is appropriate for all but the most severely impaired or multiply handicapped children, provided that adequate support is available to each child in the less restricted settings.

2. Resource rooms taught by a teacher of the hearing impaired. Many hard-of-hearing children benefit significantly from daily contact with a special teacher in a one-to-one or small group situation. Preteaching and reinforcement of material covered in the regular classroom is provided in the resource room. Intensive language instruction may also be included. The daily intensive academic help may determine the child's ability to achieve academically at a rate similar to his classmates. Time spent in the resource room varies from one-half hour to several hours a day, depending on each child's needs. The remainder of the day is spent in regular classroom activities.

3. Regular classroom placement, with scheduled services from an itinerant teacher of the hearing impaired. Children who benefit most from this type of placement are those who need academic tutoring and language remediation. Time with the itinerant teacher is usually spent on the reinforcement of academic material to insure understanding of the principles and concepts involved. The itinerant teacher may see a

given child daily, but usually does not. The typical schedule consists of two or three visits weekly for one-half to one hour each.

4. Regular classroom placement, with services from a speech pathologist, audiologist, reading teacher, or learning strategist on a regular basis. All academic work is provided by the classroom teacher, except for remedial work. Speech and hearing specialists provide speech and language remediation, as well as training in the efficient use of the auditory system. Children in this type of placement are usually seen once or twice a week for short periods of time (20-40 minutes). They may receive services from more than one type of specialist each week.

5. Regular classroom placement with periodic monitoring by a speech and hearing specialist. Monitoring may include hearing testing, amplification checks, speech, language, and educational assessment, conferences with parents and/or teachers, and provisions of inservice training to school personnel. In order to achieve well in this type of placement, hard-of-hearing children must be functioning well in the areas of communication, language, and academics so that failure to receive regularly scheduled services does not jeopardize their educational achievement.

It is important to understand that a given child seldom will need access to each of these placements, although he might. Each child should have available whatever placement or combination of services is necessary to meet his educational needs. In practical terms, therefore, any school system that attempts to serve its hard-of-hearing children must evaluate the needs of those children and its ability to provide placement options and support services that will meet them.

Summary

Appropriate services to hard-of-hearing children in public school settings depend on adequate identification and follow-up of children exhibiting any degree of hearing loss. Generally speaking, the more severe the hearing losses of the children to be served, the greater the variety of services necessary to serve them. Hence, a small, rural school system rarely can meet the needs of its severely hearing-impaired children *unless* a cooperative enterprise is established with neighboring school systems. Children with less severe hearing losses can benefit from the individual or combined services of speech and language clinicians, audiologists, teachers of the hearing impaired, psychologists, reading specialists, and regular educators, each of whom is trained to provide the children with some unique service. The identification of a team manager for

specialists working with hard-of-hearing children depends on the qualifications of the team members, but the audiologist, when available, appears to be the logical choice.

References

Brown, J. D. Contemporary programing for children with hearing impairments, In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/Special Education, University of Minnesota, 1976, 75-83.

Harrington, J. D. Hard-of-hearing pupils in the mainstream: Educational needs and services. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/ Special Education, University of Minnesota, 1976, 16-32.

McDermott, D. Services for the hard-of-hearing child. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/Special Education, University of Minnesota, 1976, 84-91.

*Handout for Teachers**

The Hearing-Impaired Child in Your Class*

The hearing-impaired child in your class has been placed there in order to benefit from the learning opportunities of your school and the available support services. The following suggestions are provided for your information and as a basis for discussion between you and the specialists providing services to the child:

1. Assign the child a favorable seat, removed from noise sources and close to the area where you instruct. A hearing aid helps only partially and cannot be expected to make this child a normal hearer.
2. Establish positive attitudes toward the hearing-impaired child; you are a model for the other children in your class.
   a. Provide a buddy system in which another child helps to communicate classroom activities.
   b. Help the class to understand hearing and hearing loss by having specialists discuss the ear, hearing, hearing loss, hearing aids, noise, famous hearing-impaired people, etc.
   c. Encourage the hearing-impaired child to participate in class activities. Do not expect less work from him/her.
3. Speak naturally and face the child, he/she may rely heavily on visual cues to aid understanding.
   a. Rephrase instructions if necessary.
   b. Introduce new topics clearly with a short sentence or key word so the child can follow changes in activities.
   c. Be sure the hearing-impaired child understands when questions are being asked.
   d. Use visual aids whenever possible.
4. Written instructions and summaries help the hearing-impaired child to keep in touch with lesson content.
   a. Place a simple lesson outline on the board.
   b. Give written tests whenever possible, making sure that they are written at a level the child can read and comprehend.
   c. Write key words or phrases on the board as the lesson progresses.
   d. Write homework assignments on the blackboard.
5. The child with a hearing impairment may have speech and language problems.
   a. If you have difficulty understanding the child, ask him to repeat.
   b. Do not call attention to the child's speech errors in the classsroom. Record and share them with the speech clinician.
   c. Realize that the child may have limited vocabulary and syntax, both receptively and expressively. His/her failure to understand may be related to this language deficit as well as the inability to hear normally.
6. The amplification used by the child is essential to his/her success. Check the hearing aid daily to be sure it is functioning. Encourage the child to tell you if the aid is not working properly, then consult with the appropriate support personnel (usually the audiologist).

*This handout is a modification of one used by the Board of Education of the City of New York, Bureau for Hearing Handicapped Children. (Source: Harrington, 1976, pp. 24-25.)

7. The parents of a hearing-impaired child may be anxious about their child's ability to cope in a regular classroom. When reporting to the parents, be sure to discuss the child's strengths as well as weaknesses. Be honest with parents.
8. Use support personnel (speech clinician, audiologist, resource room teacher) as consultants. They are available to provide special services to the child (speech and language therapy, academic tutoring, monitoring of amplification) and to answer your questions.

CHAPTER 4

Personnel Preparation for Services to the Hard of Hearing

Julia Davis and *Lee Murphy*

To provide adequate education for hard-of-hearing children, educational systems must offer a variety of support services and educational placement options. The personnel described in Chapter 3 appear to be the most appropriate professionals to provide support services, by virtue of their training and experience. Unfortunately, the majority of training programs preparing these professionals have not focused on the needs of the hard-of-hearing child in the development of curricula and practical experiences. Some of the failure to focus on hard-of-hearing children results from their relative invisibility and a lack of knowledge regarding their needs, but the need to prepare students to qualify for certification in established areas has also influenced the curricula in training programs. Neither ASHA certification requirements for speech pathologists or audiologists nor CED (Council on the Education of the Deaf) certification requirements for teachers of the hearing impaired include terminology that differentiates between hard-of-hearing and deaf children. As a result the distinctions have blurred and, for educational purposes, the emphasis has been placed on the more clearly defined needs of deaf children. Because the educational deficits associated with mild to severe hearing impairment (see Ch. 1) differ significantly from those of deaf children, modifications in personnel preparation are necessary if optimal services are to be provided to hard-of-hearing children.

The major factor to be considered when training persons who will serve hard-of-hearing children, is that they, unlike most deaf children, do not require placement in self-contained classrooms. They are best served academically in regular classrooms with their hearing peers. This does not mean that they do not experience academic problems; as a group they are serious underachievers. However, responsibility for their total education is diffused. Many do not require the services of special

teachers, especially if they have been identified early and received services from speech and hearing personnel on a regular basis. Those who require additional academic assistance can usually be served by regular access to a resource room or to an itinerant teacher, as described in Chapter 3. Others will progress satisfactorily if they receive from a speech pathologist regular language remediation that is coordinated with classroom material. Of maximum importance to all hard-of-hearing children is the systematic monitoring of their use of amplification and the acoustic environments in which they are placed. These characteristics require special training for the personnel responsible for meeting the needs of hard-of-hearing children. For example, special teachers must act as coordinators, tutors, and reinforcers, but not as primary teachers of all academic subject matter, which most of them were trained to be in the past. Audiologists who serve children in the schools must be familiar with the linguistic, educational, and social effects of hearing loss and with procedures designed to remediate them. Most training programs in audiology concentrate on the evaluation of hearing loss, rather than on the nonmedical treatment of its effects. Thus, the roles of specialists who serve hard-of-hearing children are based on different skills than those presently emphasized in many training programs.

Competencies Needed by School Personnel

One approach toward the improvement of training for special personnel is the establishment of competencies necessary for adequate performance of their professional duties. Courses and experiences are defined in terms of the behaviors that should result from them. Information and activities designed to achieve the desired goals and behaviors are provided to students, whose success is evaluated and used as a basis for course revision.

This approach has been taken by Nix (1976) in his suggestions of competencies needed by individual members of a team of professionals who serve hard-of-hearing children in the public schools.

Psychologist:

A. Ability to conduct psychometric and psychomotor evaluations of hearing-impaired children and youth.
B. Ability to develop and implement any necessary behavior remediation program for the student.
C. Ability to assess the student's social maturity and functioning.
D. Ability to communicate findings in functional terms.

Speech Pathologist:

A. Ability to develop an individual diagnostic profile of the student's expressive and receptive language capabilities and performance.
B. Ability to assess the student's speech production and reception.
C. Ability to use the communicative diagnostic information to plan a remediation program.
D. Ability to enlist the asssistance of the teacher of the hearing impaired, regular class teacher, etc., in the remediation program.
E. Ability to communicate the communicative diagnostic information...in functional terms.

Educator of the Hearing Impaired:

A. Ability to assess the hearing-impaired student's reading level and to identify any deficits.
B. Ability to assess the hearing-impaired student's academic skills and deficits.
C. Ability to design an educational program which will remediate the child's reading and academic dysfunction and will capitalize on his skill strengths.
D. Ability to communicate the child's reading, academic, etc., functioning...in functional terms.
E. Ability to orient the regular school staff, administration, etc., to the learning problems posed by a hearing impairment.
F. Ability and willingness to teach a mixed group of hearing and hearing-impaired students.
G. Ability to anticipate and, if necessary, prevent problems which the student may encounter academically or socially in his/her educational placement.
H. Ability to handle public relations for the program and to enlist cooperation from regular school personnel and anyone else necessary for program implementation.
I. Ability to assess the regular classroom environment for suitability (teaching style of regular class teacher, educational materials, class load, individualized instruction, etc.). (Nix, 1976, 143-144)

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Competencies needed by audiologists can be summarized as follows:

A. Ability to assess hearing and make recommendations concerning further evaluation and amplification.

B. Ability to analyze room acoustics, identify noise sources and their effects on communication, and make recommendations concerning placement and the use of amplification in the classroom.
C. Ability to assess communicative skills (speechreading, auditory reception, speech and language) and plan remedial programs in each area.
D. Ability to interpret the hearing loss relative to its probable effect on academic, linguistic, and social skills.
E. Ability to coordinate efforts of other professionals serving the hard-of-hearing child.
F. Ability to communicate information about hearing loss, effects of noise, and use of amplification to other personnel and to parents.

Efforts of training programs to train students in these competencies should reflect the need for professionals to work together in teams. The heterogeneity of hard-of-hearing children makes it imperative that several specialists become involved in their education, sometimes simultaneously, sometimes sequentially. Students must become aware that there will be an overlap of duties among team members in the area of language assessment and remediation, as well as academics. Communication among team members is essential, and training programs should provide opportunities for interactions with other professionals, during either training or practice. Exposure to content areas associated with other team members' training should facilitate communication, since misunderstandings based on ignorance of team member roles can result in fragmentation of services. This broader base of training will be especially important when, for a variety of reasons, a given school system does not have access to all team members. For example, in the absence of audiologists, teachers of the hearing impaired must attempt to monitor amplification; when special teachers are not available, audiologists must explain the educational problems associated with hearing loss.

In anticipation of the team approach to serving hard-of-hearing children, Brown (1976) suggested a list of competencies needed by an effective *team*, rather than its individual members. It is obvious that each team member may have a different level of expertise in the various areas but, equally obvious, that for each member to have some knowledge in each area would be ideal.

1. Ability to work as a team member on diagnostic and educational teams and with regular and special education school personnel.

2. Basic knowledge of learning theory and behavior modification.
3. Thorough understanding of normal child development, with emphasis on language acquisition and development.
4. Thorough understanding of informal and formal testing techniques, including intellect, language, achievement, speechreading, social skills, and so forth.
5. Ability to administer, interpret, and use formal and informal test data in planning appropriate instructional programs.
6. Knowledge of historical approaches in teaching hearing-impaired children (i.e., oral-aural, auditory, speechreading, natural method, manual, total communication, and cued speech).
7. Knowledge and skills in providing parent education and counseling with parents of handicapped children, in particular, hearing-impaired pupils. The ability to empathize with parents and children who are hearing impaired.
8. Knowledge of auditory processing, amplification, classroom acoustics, and so forth.
9. Knowledge of audiological testing procedures (i.e., air and bone conduction, speech audiometry, site of lesion, and the significance of varying degrees and types of hearing loss).
10. A personality and an understanding that enable acceptance of differences and what they mean. (Brown, 1976, pp. 82-83).

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Modified Teacher Education Programs

In Texas and a number of other states, certification to teach in the regular classroom is a prerequisite to certification as a teacher of the hearing impaired. Thus, schools are able to employ resident specialists who can serve part of the day as resource teachers and, part, as classroom teachers (Nix, 1976).

Another modification of interest is the development of training programs for teacher aides to increase their capability to work with hearing-impaired pupils in regular classrooms. Aides are taught to check hearing aids, adapt teaching materials, provide individual or small-group tutoring, and implement instructional objectives for hearing-impaired children. Such a program would enable a teacher's aide "to follow a child for more than one school year, thus insuring a measure of support continuity" (Nix, 1976, p. 146).

Suggestions for Further Modifications

FIELD-ORIENTED TRAINING

The purpose of field-oriented training is to allow early interaction between the prospective teacher and teaching. According to Corrigan (1976), the real work of teaching should begin as soon as a person thinks s/he wants to teach. "Useful work with simultaneous study of useful knowledge,...is the ideal form of preparation...appropriate reading material and resource people are provided to back up prospective teachers while they inquire into and practice their profession in a variety of real settings" (p. 208). This type of "hands on" teacher preparation may be especially appropriate for persons who will teach hearing-impaired children.

An understanding of the variety of educational problems that face hard-of-hearing children and the differences among services that may be available in various educational settings is necessary if the newly trained teacher is to tackle successfully the demanding task s/he faces. Field-oriented training also would serve to increase the interactions of
48 professors of various disciplines. The development of teams of professors who plan curricula, aid in evaluations, and cooperate through staffings to make educational recommendations for children would provide a model for students in training that is far more effective than any number of admonitions calling for cooperation. Modern school systems have access to a broad spectrum of assistance through consultants; students need to learn how to seek out and use them, as well as how to act as consultants themselves.

Field-study activities that lend themselves to the development of cooperative team members include (a) participation in staff meetings and staffings of children and the use of case histories and school records as a basis for writing individual prescriptive recommendations. The latter can be done in conjunction with professionals or students from other disciplines. (b) Consultation with parents, in which they are encouraged to express their perceptions and feelings about the educational needs and plans for their children, providing rare opportunities for trainees to develop empathy for the parental role in the education process. (c) Discussion with vocational rehabilitation counselors of the career choices, opportunities, and problems that face a hearing-impaired adult should have obvious ramifications for curriculum development and choice, as well as educational track placement.

Emphasis on Parent-Teacher Cooperation

The old model of education of the deaf, in which children were sent to residential schools at an early age, often resulted in relative removal of parents from participation in school activities. Not only were parents uninvolved in homework assignments and daily reinforcement of lessons, but they were also unavailable for continuous counseling by the school staff. As a result, parents were often unaware of their children's academic strengths and weaknessess, progress in school, development of communication and social skills, and vocational training opportunities. The few opportunities for interaction with parents often led educators to assume responsibilities and make decisions without considering parental desires.

In contrast, the parents of hard-of-hearing children served in local schools have the same opportunities to be involved in their children's educational process as do other parents. Frequent contact with the educators and specialists who serve their children have made parents increasingly knowledgeable about educational policies and procedures which are appropriate and advantageous for their children. The need for skill in parent counseling and for understanding of the parents' role in education is greater for teachers who come in contact with parents often than for those who meet with parents only on rare special occasions. If specialists are to elicit parental cooperation and participation, they must have a complete understanding of the rationales underlying the techniques they use and the curriculum they teach and be prepared to interpret them to parents acceptably. Defensiveness and disregard of parental feelings and desires lead to nonproductive conflict and distrust, both of which are detrimental to the educational purpose. Teacher-training programs can and should provide experiences that heighten the trainee's understanding of the principles of effective communication. The ability to listen effectively and respond empathically not only improves teachers' interactions with parents, but also contributes to smooth relationships with other personnel.

Counseling skills are particularly helpful when teachers must deliver discouraging or disappointing news to parents regarding a child's progress in school. It is tempting to hope that, given adequate support services, all hard-of-hearing children will be able to achieve up to their maximal potentials. The pertinent information we have at present does not lead to such optimism, however. If all the necessary changes in services for hard-of-hearing children were to be started immediately, it still would be several years before the children now in school and suffering from past neglect could complete their educational programs. Therefore,

teachers will be involved with underachievers for years to come even under ideal conditions.

All hard-of-hearing children are not likely to benefit maximally from educational programs that emphasize academics rather than career education. The necessity to include life-coping skills in curricula is less obvious for hard-of-hearing than deaf children but the skills are equally relevant for both. Parents do not usually expect their children to achieve poorly, however, and the decision to shift a child from an academic to a vocational track may be a difficult one for parent and teacher to make. Hard-of-hearing children also may need help in understanding themselves, their abilities, and their limitations. Therefore, teachers should receive adequate training in the following areas:

1. group dynamics;
2. counselor skills that may help children:
   a. to establish self-identity,
   b. to understand and adapt to their hearing losses,
   c. to monitor their own behavior,
   d. to develop coping skills for the regular classroom, and
   e. to make career decisions;
3. counselor skills that may help parents:
   a. to understand the probable effects of hearing loss on their child's life, both present and future,
   b. to develop abilities to assist in the child's education,
   c. to understand and express their feelings about the fact that their child has a hearing loss, and
   d. to develop knowledge about educational options, career choices, and rehabilitation services.

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Development of Inservice Training

In addition to pre-service personnel preparation programs there is a need for the development of inservice training programs for the various personnel who come in contact with hearing-impaired children. Teacher aides, regular teachers, psychologists, speech clinicians, special educators, and administrators who are already employed and who may be presently serving hard-of-hearing children may benefit significantly from exposure to information about them, because of the inadequacies of training programs in the past. Innovative teaching strategies, if and when they are developed, should be made available to practicing teachers through inservice packages or through training institutes which are designed to update teaching skills and knowledge about hearing impairment. As knowledge of hard-of-hearing children increases, it must be

transmitted to those personnel who shoulder the major responsibility for serving them.

Suggestions for Preparation of Educational Administrators

However well-trained classroom and special personnel may be, their efforts to serve hard-of-hearing children in the mainstream will have little chance of success if support from principals and other educational administrators is not forthcoming. School administrators determine the success of any program by their knowledge of and attitudes toward children's handicaps, facilitation of time and equipment to deliver services to the children, expectations for service personnel, and general encouragement or the lack of it.

Hammermeister (1976) noted that the curricula and plan of studies for future administrators seldom include the skills necessary to integrate handicapped students into regular education programs. She suggested that,

> Special education and educational administration programs should plan cooperatively to provide pre-service and inservice courses and workshops for general education administrators....At least, [administrators] should be challenged to review, initiate, and evaluate educational progams that are realistic and viable for handicapped children. (pp. 123-124)

Summary

Hard-of-hearing children require management strategies that differ from those that are suitable for deaf children but many training programs have failed to institute curriculum changes to provide professionals with the necessary new skills. Proposed program innovations include (a) field-oriented training in which students and practicing professionals interact throughout the training period; (b) interdisciplinary cooperation in the development of curricular modules that emphasize the speech, language, and educational effects of mild to severe hearing losses; (c) emphasis on a team approach to serving hard-of-hearing children; (d) development of personnel prepared to assume advocacy roles in local school systems; and (e) development of inservice packages for use with other school personnel.

Improvements in personnel preparation programs are not likely to occur unless they are paralleled by changes in certification requirements for persons who serve the hearing impaired. Until certifying agencies recognize the need for new competencies, training programs

will continue to provide a product that meets the standards of prospective employers, regardless of the needs of children. This statement is not intended to imply that certification agencies do not *care* about the needs of children. The sad fact is that they do not *know* the needs of hard-of-hearing children because empirical data concerning these needs have not been collected and disseminated. The same condition is also true for the effectiveness of teaching strategies and for the value of much of the material which is included in current teacher-training curricula. Obviously, then, the first step in the improvement of training is needs assessment: of children, teachers, education agencies, specialists, and certification agencies as they relate to the realities of hearing impairment and education. Close cooperation among everyone involved is necessary if hard-of-hearing children are to be educated adequately. The task is enormous; the time to begin is now.

References

Barkuloo, H. Programing for hard-of-hearing children. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/Special Education, University of Minnesota, 1976, 1-6.

52 Brown, J. D. Contemporary programing for children with hearing impairments. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/Special Education, University of Minnesota, 1976, 75-83.

Corrigan, D. Needed reforms in schools and teacher education: A context for discussing the education of the hearing impaired. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/Special Education, University of Minnesota, 1976, 203-218.

Goetzinger, C. P., Harrison, C., & Baer, C. N. Small perceptive hearing loss: Its effects in school-age children. *Volta Review,* 1964, **66,** 124-131.

Hammermeister, F. Some thoughts on teacher education and the hard-of-hearing child. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/Special Education, University of Minnesota, 1976, 119-128.

Kodman, F. Educational status of hard of hearing children in the classroom. *Journal of Speech and Hearing Disorders,* 1963, **28,** 297-299.

Nix, G. W. Programmatic considerations for the improvement of educational services for hard-of-hearing children. In *Serving hard-of-hearing pupils: Alternative strategies for personnel preparation.* Minneapolis, Minn.: Leadership Training Institute/Special Education, University of Minnesota, 1976, 140-147.

CHAPTER 5

Need for Research

Julia Davis

Research on hard-of-hearing children, their educational and linguistic characteristics and needs, and the suitability of current educational programs for them is rare. The reasons are complex and are related to the characteristics and location of the population, and to the confusion over professional responsibility for it. The population is heterogeneous: Hard-of-hearing children vary in their degrees of hearing loss from 15 dB to 90 dB HL; their ages at which identification and intervention occur; their family constellations and experiences; intelligence; socio-economic status; type or adequacy of intervention provided; and the presence of additional handicapping conditions. The settings in which the children are found are also heterogeneous: at home, receiving no services; in all grade levels of public schools; in residential schools and special classes (both private and public); and in clinics or private tutoring situations. It is little wonder that researchers are discouraged from concentrating on hard-of-hearing children who cannot be located or grouped easily. The greatest amount of research has been conducted on deaf children, particularly those in residential schools who represent an easily identified group. Although the results of such studies are useful for understanding the effects of profound hearing loss, they are not applicable to hard-of-hearing children, particularly those who are served in the average local school system.

If mainstreaming of hearing-impaired children in public schools is to be successful, certain basic information must be sought. The following questions do not represent an exhaustive list, but they indicate some of the most pressing research needs:

1. How many hard-of-hearing children are there in the public schools? How are they distributed with regard to degree of hearing loss and geographical location?
2. What educational problems do hard-of-hearing children exhibit?

How does academic achievement relate to degree of hearing loss? To number and type of support services?

3. What social problems do hard-of-hearing children exhibit? How are they viewed by their peers? By teachers? Do social problems increase with age or degree of hearing loss? How can they be measured and alleviated?

4. What psychological problems do hard-of-hearing children exhibit? Are there specific behavior patterns that are peculiar to hearing loss? Are these behaviors recognized by peers and teachers? How are potential problems handled in the schools?

5. What are the effects of mainstreaming on speech, language, and academic characteristics of hard-of-hearing children? Does placement in a regular classroom result in performance that differs from performance in special placement?

6. What are the effects of current educational practices on hearing-impaired children in the schools? Do linguistic and academic performances differ as a result of the methodologies employed?

7. How well can hard-of-hearing children compete with their hearing peers? In what areas does such competition appear to be healthy? Undesirable?

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8. Are certain curricular materials especially beneficial to hearing-impaired children, such as those in reading, language arts, or math?

9. How can curricular materials be modified for more appropriate use with hard-of-hearing children?

10. How effective is inservice training for preparing regular teachers who have hard-of-hearing children in their classes? Do teachers feel more confident and comfortable after such training? What are the most important components of inservice training? Do children reflect any manifestations of such training?

11. What are the acoustic characteristics of classrooms in which hard-of-hearing children are found? What noise sources are most common? How can they be minimized?

12. What type of amplification is most beneficial in the regular classroom? What differences exist in children's abilities to discriminate speech in classrooms, using various amplification systems?

13. What are the effects of "open" classrooms on communication with hard-of-hearing children? On their academic performances?

14. What placement options are essential for optimal performances by hearing-impaired children?

15. How effective is mainstream education for more severely hard-of-hearing children relative to vocational opportunities and achieve-

ments? How do their opportunities and achievements compare to those of children trained in special programs?

16. What is the role of the teacher's aide in serving hard-of-hearing children?

17. How effective are schools in providing parent counseling? What are parental attitudes about mainstreaming versus special placement? How may parents best be trained to serve as "teachers" for their children?

18. What are the effects of unilateral hearing loss on language development, academic achievement, and social skills?

Summary

It is obvious that the task of serving hard-of-hearing children is complex. If the services are to be successful, they must be based on knowledge of the factors that influence many different aspects of the children's lives. The task cannot be accomplished without the concern and cooperation of parents, teachers, special personnel, administrators, researchers, and the hearing-impaired children themselves. Unless meaningful data are collected soon and adequate personnel are trained and hired by educational agencies, hard-of-hearing children are likely to continue to receive inadequate services in many local school systems. Expressing a desire to serve these special children well is not sufficient for their needs. A concerted effort must be launched soon if hard-of-hearing children are to reach their linguistic, academic, vocational, and behavioral potentials.

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Reynolds, M. C. (Ed.). *Psychology in the schools: Proceedings of the conference on psychology and the process of schooling in the next decade*. (1971)

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Deno, S. L., & Mirkin, P. K. *Data-based program modification: A manual*. (1977)

Birch, J. W. *Hearing impaired pupils in the mainstream*. (1976)

Birch, J. W. *Mainstreaming: Educable mentally retarded children in regular classes*. (1974)

Deno, E. N. (Ed.). *Instructional alternatives for exceptional children*. (1972)

Hively, W., & Reynolds, M. C. (Eds.). *Domain-referenced testing in special education*. (1975)

Jones, R. A. (Ed.). *Mainstreaming: The minority child in regular classes*. (1976)

Parker, C. A. (Ed.). *Psychological consultation: Helping teachers meet special needs*. (1975)

Reynolds, M. C. (Ed.). *Mainstreaming: Origins and implications*. (1976)

Thiagarajan, S., Semmel, D. S., & Semmel, M. I. *Instructional development for training teachers of exceptional children: A sourcebook*. (1974)

Weinberg, R. A., & Wood, F. H. (Eds.). *Observation of pupils and teachers in mainstreaming and special education settings: Alternative strategies*. (1975)

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For information, write to address given.

Reynolds, M. C. (Ed.). *National technical assistance systems in special education: Report of the conference in Washington, D. C.* (1976)

Reynolds, M. C. (Ed.). *Special education and school system decentralization.* (1975)

MISCELLANEOUS

Peterson, R. L. "Mainstreaming: A working bibliography." (A mimeographed, periodically revised bibliography of books and articles relating to "mainstreaming".)

Peterson, R. L. "Mainstreaming training systems, materials, and resources: A working list." (A mimeographed, periodically revised listing of training systems and other "mainstreaming" resources.)

IN PREPARATION

Deno, E. N. *Mainstreaming: Learning disabled, emotionally disturbed, and socially maladjusted children in regular classes.* (Winter 1977)

58 Lundholm, K., & Prouty, R. W. *Change in the schools: A casebook.* (Winter 1977)

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For information, write to address given.

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Reynolds, M. C. (Ed.). *Futures of education.* (Winter 1977)

Grosenick, J. K., & Reynolds, M. C. (Eds.). *Teacher education: Renegotiating roles for mainstreaming.*